

What is claimed is:

1. A method of hydroforming a metal part comprising:
placing a part to be formed within a die;
closing the die to enclose the part to be formed; and
introducing a high pressure fluid to an interior of the die for expanding the part against an interior surface of the die, the high pressure fluid having a pulse applied thereto for increasing a material flow of the part within the die.
2. The method according to claim 1, wherein the part to be formed is a tubular metal blank, and the introducing a high pressure fluid to an interior of the die includes introducing a high pressure fluid to an interior of the tubular metal blank to expand the tubular metal blank outwardly against an interior surface of the die.
3. The method according to claim 1, wherein the part to be formed is sheet metal.
4. The method according to claim 1, wherein application of a pulse to the high pressure fluid includes applying a pulse to the high pressure fluid by a variable frequency drive motor having a frequency range of about 5 to 60 hertz.
5. A method of shaping a metal blank comprising:
placing the metal blank within a die;
closing the die to enclose the metal blank; and
introducing pressurized fluid with pulsed magnitudes of pressure to an interior of the die to expand the metal blank outwardly against an interior surface of the die.
6. The method according to claim 5, wherein the metal blank is tubular, and the introducing pressurized fluid with pulsed magnitudes of pressure to an interior of the die includes introducing pressurized fluid with pulsed magnitudes of pressure to an interior of the tubular metal blank to expand the tubular metal blank outwardly against an interior surface of the die.
7. The method according to claim 5, wherein the metal blank is sheet metal.

8. The method according to claim 5, wherein the introducing pressurized fluid with pulsed magnitudes of pressure to an interior of the die includes applying a pulse to pressurized fluid by a variable frequency drive motor having a frequency range of about 5 to 60 hertz.

9. A hydroforming assembly, comprising:

a die assembly;

a blank positioned in said die assembly;

a pressurized fluid within said die assembly to force said blank against a wall of said die assembly to conform said blank with said wall of said die assembly; and

a pulse-generating device coupled to said pressurized fluid to provide a pulse to said pressurized fluid to create pulsing magnitudes of pressure of the pressurized fluid against said blank to force said blank against said wall of said die assembly.

10. A hydroforming assembly, according to claim 9, wherein said pulse generating device includes a fluid line that delivers fluid into said hydroforming die; a piston slidably and sealingly mounted within a cylinder, said cylinder having an outlet connected to said fluid line; and a variable frequency drive motor having a rotatable drive shaft operatively coupled to said piston, said drive shaft operable to cause linear movement of said piston within said cylinder at varying frequencies to introduce pressurized fluid with pulsed magnitudes of pressure to said fluid line.

11. The assembly according to claim 9, wherein said blank is tubular.

12. The assembly according to claim 10, wherein said variable frequency drive motor has a frequency range of about 5 to 60 hertz.

13. The assembly according to claim 10, wherein said pressurized fluid ranges from about 5 to 1500 bar.

14. The assembly according to claim 10, wherein said drive shaft is coupled to said piston by a connecting rod that is eccentrically mounted to said drive shaft by a bearing journal.

15. A hydroforming assembly comprising:
 - a hydroforming die;
 - a metal blank positioned within said die; and
 - means for pulsing magnitudes of pressure of hydroforming fluid being delivered into said hydroforming die for shaping said metal blank.